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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/004,691

12/04/2001

Brian T. Murray

DP-300214/DE3-0092

7618

22851 7590 10/16/2006
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EXAMINER

ABELSON, RONALD B

ART UNIT	PAPER NUMBER
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2616

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,691

Applicant(s)

MURRAY ET AL.

Examiner

Ronald Abelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31-51 is/are allowed.
- 6) ☒ Claim(s) 1-8, 13-18 and 25-28 is/are rejected.
- 7) ☒ Claim(s) 9-12, 19-24, 29 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/4/2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 3/18/2004 3/21/05.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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Restriction

1. Regarding the restriction of the prior office action, 4/3/05, the examiner hereby rescinds the election requirement.

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 26 recites the limitation "slot" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claims 27 recites the limitation "slot" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi (US 7,092,403) in view of Gough (US 20010048716).

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Regarding claim 1, Takeuchi teaches a communications channel for propagating a signal therealong (fig. 1 element 13, col. 3 lines 35-40).

Takeuchi is silent on a nodal communications system and a signal coupling system coupled to a communications channel and to the nodal communications system for coupling a signal between the communications channel and the nodal communications system.

Gough teaches a nodal communications system (fig. 2 upstream data path 42 and downstream data path 44, [0019]) and a signal coupling system (fig. 2 box 40, hybrid circuitry, [0019]) coupled to a communications channel (fig. 2 line 38, transmission line 38, [0019]) and to the nodal communications system for coupling a signal between the communications channel and the nodal communications system.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Takeuchi by attaching the hybrid circuitry and a nodal communications system to the communications channel of Gough, as suggested by Gough. This modification can be performed according to the teachings of Gough. This modification would benefit the system by incorporating another communications system in the system of

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Takeuchi while closely matching the communications channel impedance (Gough: [0008]). By matching the impedance the communications channel echo, noise, and reflections are minimized.

Regarding claim 2, a first impedance connected to a first end of the communications channel (Takeuchi: fig. 1, see impedance associated with subsystem 11, col. 3 lines 41-43) and a second impedance connected to the second end of the communications channel (Takeuchi: fig. 1, see impedance associated with subsystem 12, col. 3 lines 43-45).

Regarding claim 5, the first impedance comprises a transmitter (Takeuchi: fig. 1 box 11c).

Regarding claim 6, the second impedance comprises a receiver (Takeuchi: fig. 1 box 12c).

6. Claims 18, 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi in view of Gough, and Snygg (US 6,023,244).

Regarding claims 18 and 25, Takeuchi teaches a first communication network (fig. 1, col. 3 lines 35-40).

Takeuchi teaches the first communication network propagates the signal therealong (fig. 1, box 11c, 12c, subsystems 11 and 12 communicate with each other, col. 3 lines 45-48).

Takeuchi teaches propagating the signal at a prescribed frequency (fig. 1, box 11c, 12c, subsystems 11 and 12 communicate with each other, col. 3 lines 45-48). Note, given communication, a frequency must exist.

Takeuchi is silent on the first communication network in close proximity to at least one other communication network of the plurality of communication networks.

Gough teaches the first communication network in close proximity to at least one other communication network of the plurality of communication networks (fig. 2: note element 40 separates two communication networks).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Takeuchi by coupling the communication network to a second network, as suggested by Gough. This modification can be performed according to the teachings of Gough. This modification would benefit the system by allowing the communication network of Takeuchi to communicate

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with other networks.

The combination is silent on field coupling the signal out of the first communication network into the at least one other communication network for propagation therealong.

Snygg teaches a method for field coupling the signal out of the first communication network into the at least one other communication network for propagation therealong (microstrip antennas, suppressing cross-coupling, col. 2 lines 21-26). Note, applicant teaches microstrip antennas performing field coupling [0026].

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by using microstrip antennas for connecting the communication networks, as suggested by Snygg. This modification can be performed according to the teachings of Snygg. This modification would benefit the system by suppressing cross coupling.

7. Claims 3, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Takeuchi and Gough as applied to claim 2 above, and further in view of Sisson (US 4,408,285).

The combination is silent on the first impedance has an impedance equal to the characteristic impedance of the communications channel, as specified in claim 3; and the second impedance has an impedance equal to the characteristic impedance of the communications channel, as specified in claim 4.

Sisson teaches a method for matching the first/second impedance to be equal to the characteristic impedance of the communications channel (fig. 12, line 602, col. 25 lines 29-32). The examiner corresponds the applicant's communications channel to line 602 of the reference.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Takeuchi and Gough by performing impedance matching on the communications channel, as suggested by Sisson. This modification can be performed according to the teachings of Sisson. This modification would benefit the system since by matching the impedance of the communications channel echo, noise, and reflections are minimized.

8. Claim 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Takeuchi and Gough as applied to claim 1 above, and further in view of Amit (US 6,941,576).

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The combination is silent on the communications channel comprising coaxial cable.

Amit teaches a coaxial cable (col. 3 lines 17-19).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Takeuchi and Gough by replacing the communications cable of the combination (Takeuchi: fig. 1 element 13) with a coaxial cable, as suggested by Amit. This modification would benefit the system since coaxial cable is an excellent communication medium (Amit: col. 3 lines 17-19).

9. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Takeuchi and Gough as applied to claim 1 above, and further in view of Snygg.

The combination is silent on the signal coupling system comprises a field coupling device.

Snygg teaches a method for a signal coupling system comprising a field coupling device (microstrip antennas, suppressing cross-coupling, col. 2 lines 21-26).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by using microstrip antennas for connecting the communication

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networks, as suggested by Snygg. This modification can be performed according to the teachings of Snygg. This modification would benefit the system by suppressing cross coupling.

10. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Takeuchi, Gough, and Snygg as applied to claim 8 above, and further in view of Redmond (US 5,101,171).

Regarding claim 13, the combination is silent on an isolator for suppressing both electro-magnetic interference and unwanted propagation of signals along the outer side of the communications channel.

Redmond teaches an isolator / shield for suppressing both electro-magnetic interference and unwanted propagation of signals along the outer side of the communications channel (fig. 1b, outside shield of cable covered with ferrite beads, col. 5 lines 27-34).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Takeuchi, Gough, and Snygg by surrounding the communications channel (Takeuchi: element 13) with the isolator of Redmond. This modification can be performed according to the teachings of

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Redmond. This modification would benefit the system by shielding the communications signals from outside interference.

Regarding claim 14, as previously shown, the combination teaches the isolator comprises at least one ferrite bead (Redmond: fig. 1b, outside shield, ferrite beads, col. 5 lines 27-34).

11. Claim 15 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Takeuchi and Gough as applied to claim 1 above, and further in view of Kori (US 6,526,510).

Although the combination specifically teaches a communications cable between two points, the combination teaches other topologies are possible Takeuchi (col. 6 lines 6-9).

The combination does not explicitly teach a bus topology.

Kori teaches the communication cable may be a bus topology (fig. 2 line 280, col. 4 lines 45-47).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Takeuchi and Gough by replacing the communication cable of the combination (Takeuchi: fig. 1 line 13) with the bus of Kori, as

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suggested by Kori. This modification would benefit the system since a bus topology would allow for more than two transceivers two communicate.

12. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Takeuchi and Gough as applied to claim 1 above, and further in view of Tomioka (US 5,452,115).

Although the combination specifically teaches a communications cable between two points, the combination teaches other topologies are possible Takeuchi (col. 6 lines 6-9).

Regarding claim 16, the combination does not explicitly teach a ring topology.

Tomioka teaches a ring topology (fig. 2B, col. 7 lines 9-11, col. 14 lines 9-10).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by placing the transceivers in a ring topology, as suggested by Tomioka. This modification would benefit the system since a ring topology would allow for more than two transceivers two communicate.

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Regarding claim 17, the combination does not explicitly teach a star topology.

Tomioka teaches a star topology (fig. 2A, col. 7 lines 9-11, col. 31 lines 30-34).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by placing the transceivers in a ring topology, as suggested by Tomioka. This modification would benefit the system since a star topology would allow for more than two transceivers two communicate.

13. Claim 28 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Takeuchi and Gough as applied to claim 1 above, and further in view of Bandeira (US 2002/0072329).

The combination is silent on a mesh topology.

Bandeira teaches a mesh topology ([0014]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Takeuchi and Gough by constructing the communications channel in a mesh topology, as suggested by Bandeira. This modification can be performed by adhering to standards associated with mesh networks. This modification would benefit the system since mesh

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networks provide multiple alternate routes between any two points (Bandeira: [0014]).

Response to Arguments

14. Applicant's arguments, see pg. 2, filed 7/3/2006, with respect to the restriction requirement have been fully considered and are persuasive. The requirement for election has been withdrawn.

Allowable Subject Matter

15. Claims 31-51 allowed.

16. Claims 9-12, 19-24, 29, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ra
Ronald Abelson
Examiner
Art Unit 2616
